# Enamelled Wirewound Power Resistors
# Axial Leads

As a result of more than 50 years of experience and continuous improvements the RWM Series of resistors features proven reliability in AC or DC applications.
The high quality of the RWM resides mainly in the use of a proprietary Vishay Sfernice enamel fired at high temperature and free from any compound liable to corrode the resistive wire.

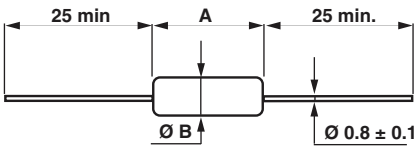
## FEATURES

- High dissipation up to 30 W (25 °C)
- Fire proof
- Excellent endurance typical drift ± 1.5 % after 1000 h
- Conformal vitreous enamel
- All welded construction
- Low ohmic values 0.1 Ω available
- Termination: Sn/Ag/Cu
- Compliant to RoHS Directive 2002/95/EC

RoHS COMPLIANT

The performance of this series of professional resistors fully meets the requirements of the following specifications:
- NF C 83-210-001
- CECC 40201-001
- BS - CECC 40201-002

## DIMENSIONS in millimeters




## TECHNICAL SPECIFICATIONS

| VISHAY SFERNICE SERIES AND STYLE | | RWM 4 x 10 | RWM 4 x 22 | RWM 5 x 26 | RWM 6 x 22 | RWM 8 x 26 | RWM 6 x 34 | RWM 8 x 34 | RWM 8 x 45 | RWM 10 x 45 | RWM 10 x 64 | RWM 10 x 65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Designations | CECC 40201-001 | RB59 | RB61 | RB57 | RB57 | RB60 | RB60 | RB58 | RB58 | - | - | - |
| | CECC 40201-002 | JB | HB | - | KB | - | LB | - | MB | - | - | - |
| Power Rating | at + 70 °C | 2.6 W | 4.5 W | 6 W | 6 W | 7 W | 7 W | 9.5 W | 9.5 W | 21 W | 21 W | 25.8 W |
| | at + 25 °C | 3 W | 5 W | 7 W | 7 W | 8 W | 8 W | 11 W | 11 W | 25 W | 25 W | 30 W |
| | With Surface Temp. ≤ + 450 °C | 5.5 W | 7 W | 10 W | 10 W | 10 W | 12 W | 14 W | 20 W | 25 W | 25 W | 30 W |
| Ohmic Range in Relation to Tolerance ± 5 % E24 Series | | 0.1 Ω 10 kΩ | 0.1 Ω 16 kΩ | 0.1 Ω 27 kΩ | 0.1 Ω 39 kΩ | 0.1 Ω 27 kΩ | 0.33 Ω 36 kΩ | 0.33 Ω 36 kΩ | 0.47 Ω 62 kΩ | 0.47 Ω 62 kΩ | 0.68 Ω 100 kΩ | 0.68 Ω 100 kΩ |
| Qualified Ohmic Range NF C 83-210 | | 0.1 Ω 10 kΩ | 0.1 Ω 6.8 kΩ | 0.15 Ω 10 kΩ | 0.15 Ω 39 kΩ | - | 0.33 Ω 15 kΩ | - | 0.47 Ω 33 kΩ | - | - | - |
| Limiting Element Voltage | | 120 V | 300 V | 350 V | 350 V | 500 V | 500 V | 650 V | 650 V | 800 V | 800 V | 800 V |
| Critical Resistance | | 4.8 kΩ | - | 18.8 kΩ | 17.5 kΩ | - | 31 kΩ | - | 38 kΩ | 25.6 kΩ | 25.6 kΩ | 21.3 kΩ |
| Dimensions in mm | A | 12 ± 1 | 22.1 ± 1 | 24.7 ± 1 | 18 ± 1 | 24.7 ± 1 | 33.7 ± 1 | 33.7 ± 1 | 45.8 ± 2 | 45.8 ± 2 | 63.8 ± 1 | 63.8 ± 1 |
| | Ø B | 5.5 ± 1 | 5.5 ± 1 | 7.4 ± 1.5 | 6.5 ± 1 | 7.4 ± 1.5 | 7.4 ± 1.5 | 7.4 ± 1.5 | 9.4 ± 1.5 | 9.4 ± 1.5 | 9.4 ± 1.5 | 9.4 ± 1.5 |
| Weight in g | | 1 | 2 | 3 | 2.2 | 3 | 4 | 4 | 8 | 8 | 14 | 14 |

**Note**
• Undergoes European Quality Insurance System (CECC)



For technical questions, contact: sfer@vishay.com

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| PERFORMANCE | | | |
|---|---|---|---|
| CECC 40201 - EN 140-201 | | | TYPICAL DRIFTS |
| TESTS | CONDITIONS | REQUIREMENTS | |
| **Short Time Overload** | 10 $P_r$ during 10 s<br>25 °C ambient | ± (2 % + 0.1 Ω) | ± (0.5 % + 0.05 Ω) |
| **Temperature Cycling (5 cycles)** | - 55 °C + 200 °C | ± (1 % + 0.05 Ω) | ± (0.5 % + 0.05 Ω) |
| **Humidity (Steady State)** | 56 days<br>40 °C ambient - R.H. 95 % | ± (5 % + 0.1 Ω) | ± (0.5 % + 0.05 Ω) |
| **Terminal Strength** | Tensile test: 20 N<br>2 successive bending<br>2 full rotations of 180° | ± (1 % + 0.05 Ω) | ± (0.1 % + 0.05 Ω) |
| **Load Life** | 1000 h at $P_r$<br>90'/30' cycle<br>25 °C ambient | ± (5 % + 0.1 Ω) | ± (1.5 % + 0.05 Ω) |

## OVERLOAD

Heavy overloads can be endured in the form of short pulses < 0.1 s. Particular requirements should be submitted to Vishay Sfernice, specifying peak voltage, cycle and environmental conditions.

## RECOMMENDATIONS FOR USE

Since these components are high dissipation power resistors, customers are advised to use a high melting point solder.

For low ohmic values, the measurement becomes critical and the connecting wires resistance is to be included. The value is measured at 5 mm from the resistor body.

### Group Mounting

In a still atmosphere, a distance between axes equal to five times the resistor's diameter is recommended.

### Cabinet Mounting

- Unventilated box: Dissipation should be reduced (see dimensional drawing).
- Forced ventilation: If conditions are appropriate, dissipation may be doubled or even trebled.
- In any case: The surface temperature at the hottest point should not exceed 450 °C.

These aspects should be considered by the end user.

| ELECTRICAL SPECIFICATIONS | | |
|---|---|---|
| **Tolerance** | **Standard** | ± 5 % |
| | **On request** | ± 1 % and ± 2 % |
| **Temperature Coefficient + 75 ppm/°C typical** | | |
| **Dielectric Withstanding Voltage NF EN140000** | | 500 $V_{RMS}$ - 1 min - 10 mA |
| **Inductance** | | Non inductive (Ayrton-Perry) winding available |



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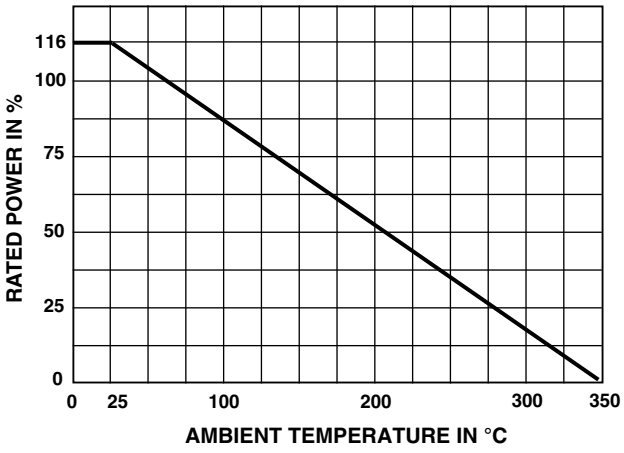
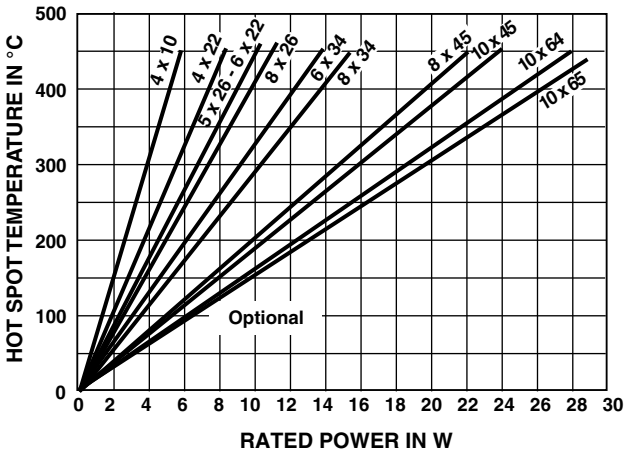
## POWER RATING




## TYPICAL TEMPERATURE RISE




## MARKING

Vishay Sfernice trademark, model and style, CECC style, if applicable (except for the smallest model due to lack of space: (4 x 10 or RB 59), ohmic value, resistance tolerance, manufacturing date (year - month).

## ORDERING INFORMATION

| RWM | 4 x 10 | | XXX | 1U2 | ± 5 % | AM500 | e1 |
|---|---|---|---|---|---|---|---|
| MODEL | STYLE | NI OPTIONAL | SPECIAL DESIGN | OHMIC VALUE | TOLERANCE | PACKAGING | LEAD (Pb)-FREE |
| | | Non Inductive Winding | Method N° Optional | Custom items are subject to extra charge and minimum order. Please see price list. | | | |

## GLOBAL PART NUMBER INFORMATION

| R | W | M | 0 | 4 | 1 | 0 | | 1 | R | 2 | 0 | J | R | 1 | 5 | | E | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| GLOBAL MODEL | SIZE | OPTION | OHMIC VALUE | TOLERANCE | PACKAGING | SPECIAL | LEAD (Pb)-FREE |
|---|---|---|---|---|---|---|---|
| **RWM** | d x L:<br>**0410**<br>**0422**<br>**0526**<br>**0826**<br>**0634**<br>**0845**<br>**1045**<br>**1064**<br>**1065** | **Blank**<br>or<br>**N**<br>(Non inductive winding) | The first three digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point.<br>**48R7** = 48.7 Ω<br>**1R20** = 1.2 Ω<br>**1002** = 10 000 Ω<br>**R330** = 0.33 Ω<br>... | **F** = 1 %<br>**G** = 2 %<br>**J** = 5 %<br>**K** = 10 % | Size 0410, 0422, 0526, 0826, 0622:<br>**R15** = Reel (1000 pieces)<br>Size 0845, 1045, 1064, 1065:<br>**B25** = Box (50 pieces)<br>Size 0634:<br>**S09** = Bag (50 pieces)<br>Other packaging existing | As applicable<br>Ex: **AD7** | Sn(99), Ag(0.3), Cu(0.7):<br>**E1** |

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